

## The Rufford Small Grants Foundation

### Final Report

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Congratulations on the completion of your project that was supported by The Rufford Small Grants Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to [jane@rufford.org](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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Grant Recipient Details	
Your name	Agustin Paviolo
Project title	A research project to help preserve the endangered jaguar population of the Green Corridor of Misiones, Argentina
RSG reference	10.10.09
Reporting period	2/19/2010 to 2/19/2013
Amount of grant	£12,000
Your email address	<a href="mailto:paviolo4@gmail.com">paviolo4@gmail.com</a>
Date of this report	3/10/2013

**1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.**

Objective	Not achieved	Partially achieved	Fully achieved	Comments
1-Estimate jaguar population dynamics in the Atlantic Forest of Misiones			Yes	We developed a camera trap survey between October of 2010 and January of 2011. We join effort with Brazilian researchers to conduct a bi-national survey that constitutes the most extensive survey for jaguars in the world. The results show that the density of jaguars in the area is still low but the population is stable since 2004. Survivorship is relatively high on adults but lower for cubs and sub-adults. These results were presented in scientific meetings and the information was incorporated to the Conservation Plan for jaguars in the region. We will continue the monitoring of the population with a new survey during the second part of 2013.
2-Development of habitat models to identify the factors that affect jaguars at landscape level.			Yes	We develop two main analyses on this subject. One comparing the responses of jaguars and pumas to landscape transformation and the other evaluating the habitat suitability for jaguars using a bi-dimensional model. This last analysis allows us identify the main habitat core areas for jaguars in the region and the better management actions (restoration or protection, etc) to improve jaguar habitat. The results of this part of our work were used as the main map to guide the efforts to improve jaguar habitat in the Jaguar Conservation Plan.
3-Evaluate mechanism of coexistence between pumas and jaguars. Study of the fine scale spatial segregation using GPS collars.		Yes		We invest most of our energy and resources to try to achieve this goal. However, it was difficult to capture a high number of animals and follow them. We joined efforts with a Brazilian Research team that work in the region to try to share resources and obtain more results. We already captured four pumas and seven jaguars. However, one puma and one jaguar were not fixed with

				collars due to its young age. We had problems with the collar of one puma, and one adult jaguar lost prematurely its collar. We already have information of two pumas and five jaguars that are a good base to try to understand the habitat use and the coexistence of these two species. We will continue our efforts to obtain more information of more animals.
4-Evaluate mechanism of coexistence between pumas and jaguars. Study the diet of these species.			Yes	We analysed the diet of the two species using the rest of prey founded in the scats. We found that jaguars and pumas have a high overlap on the use of prey species. However, jaguars are more dependent of prey of higher size, mainly peccaries. The peccaries are also one of the preferred prey species for poachers, so the impact of poaching is affecting more jaguars than pumas. This result reinforce the necessity of improve the protection against poaching in the region.
5-To evaluate the potential threats to the health of this jaguar population		Yes		We already collected samples of the captured individuals. To have a higher number of samples we also start to collect carnivores killed on car collisions. Also we start a study on the presence of diseases of coaties ( <i>Nasua nasua</i> ) with support of the National Park Administration of Argentina. All this information will help us to understand the prevalence and possible impact of diseases on carnivores and especially on jaguars. We still didn't analyse all the samples but the preliminary results suggest that wild carnivores have been exposed to a high number of potential dangerous diseases to their populations. We will continue this line of research during the next 2years.
6-Application of the result of the Project on jaguar conservation policies			Yes	One of the most important aims of our project was the development of knowledge to be applied on jaguar conservation policies in the region. Through a participative process we developed a Jaguar Conservation Plan

				<p>for the jaguar population of the Green Corridor of Misiones. This was the first Conservation Plan for jaguars in Argentina and serve as the basis for conservations plans of other regions of the country.</p> <p>Most of the information used in the elaboration of the plan was collected by our project, and it was used to guide the main conservation actions. All this information was generated since 2003 with the support of two Rufford Small Grants, this Booster Grant and many other institutions.</p>
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**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).**

One of the main difficulties that we faced during the development of the project was that we couldn't get all the planned funds to start this part of the project. Our submission to Panthera Foundation and Mohamed Bin Zayed Species Conservation Fund were not funded. This situation delayed the development of some of the planned activities. However, in 2011 and 2012, we received new support from Fundación Vida Silvestre Argentina and WWF Switzerland that allow us to continue with the planned work.

Other of the difficulties was the low capture rate of jaguars and pumas in the region. This delayed part of our planned work. Big cats are difficult to catch, especially if they live in low densities as in Misiones Province in Argentina. We did a big effort to increase our chances of capture success; we travel to receive training in the use of other capture methodologies (foot snares) that provide higher chances of captures. At present we have a very competent team for captures with a very good experience in this kind of work.

Finally, we suffered problems due to the failure of some of the collar that we put on jaguars and pumas. The data of the first collars were very difficult to download and this was an activity that required high amounts of time and money (mainly airplane flights). At present, we changed the models and brands of the collars with very good results.

**3. Briefly describe the three most important outcomes of your project.**

We think that the most important outcome of our work was the incorporation of the scientific information that we generated in the conservation plan for jaguars in the region. Our results served as the basis of the existent knowledge on the status of the jaguar population and guided most of the conservation actions.

Another important thing was the dissemination of the results and activities of the project between the government and the public. This was important to inform the critical situation of this jaguar population and the main threats to the species (see below in section number 6).

Finally, we consider that we generate very important information of high scientific quality about the main questions that were the main aims of the project. This was the base of our success on the incorporation of the information in the conservation plan and the high public support to the public campaigns.

**4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).**

Almost all the people that work in this project live in Misiones Province. The development of the project gave them the opportunity to develop their professional careers and different skills. During the period of the Booster Grant, more than 30 professional of different disciplines (biologist, veterinaries, park rangers, etc) participated of the project.

Also we assisted common people and the government in the cases of felid-cattle ranchers' conflict or human-felid conflicts, giving professional support to search the better solution to these cases. This activity was very valued for common people and the government.

**5. Are there any plans to continue this work?**

Yes. At present we continue with some of the lines of research that were not fully achieved (study of jaguars and pumas with GPS collars and health carnivore issues). Also we are starting a new camera trap survey to continue the monitoring of jaguar abundance and the population dynamics. Also we are starting new lines of research related with the research priorities identified in the Jaguar Conservation Plan (see section number 9)

**6. How do you plan to share the results of your work with others?**

One of the main ways for share the information that we generated was the process of the elaboration of the Jaguar Conservation Plan and the final document. This was especially important to give first hand information to the managers and people of the other NGOs.

Also we work to disseminate the result on the general public writing notes to the newspapers, using different web pages and trough interviews. The highest point of these activities was during the middle part of 2012 when one of the jaguars that we were monitoring with a GPS collar (Guacurari) was killed by poachers inside one protected area. We started a public campaign that was supported by 13,500 people that asked the government most resources to protect reserves and jaguars. Also we participate in most than 30 interviews, and this new was mentioned more than 150 times in local, national and foreign media. For this campaign we create a facebook page for support jaguar conservation ([www.facebook.com/laselvaestadeluto](http://www.facebook.com/laselvaestadeluto)). All these activities were an effective way to disseminate the results of our research and jaguar conservation problems.

Finally, we disseminate our result in the local, national and international scientific community trough publications on peer review journals and lectures on scientific meetings. This was useful not only to inform others scientist of our activities and jaguar conservation initiatives in the Green Corridor, but also to ensure the quality of our research and conclusions.

**7. Timescale: Over what period was the RSG used? How does this compare to the anticipated or actual length of the project?**

The Funds provided by the Booster Grant were used mainly during 2010 and 2011 because constitute most of the available funds to run the activities of the project. This happened because our proposals to other fund sources were not approved. However, in the second part of 2011 we obtained funds from Fundación Vida Silvestre (FVSA) and the WWF. These problems of the availability of funds and the difficulty to catch felids delayed most of our activities that took more than twice of time of the proposed schedule.

**8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.**

Item	Budgeted Amount (total cost of 2010 and 2011)#	Actual Amount	Difference	Comments
Field vehicle	10.909	15000	4.091	The vehicle was acquired in 2011 when we get new funds of FVSA and WWF. Due to availability of funds we acquired a younger vehicle (2006)
Vehicle maintenance	4.182	6.000	1.818	We expanded the project on time and in consequence the cost of vehicle maintenance
GPS collar for jaguars and pumas	15.758	12.758	-3000	Due to the difficulty of capture animals we didn't buy all the proposed collars
Camera traps	2.727	2.727	0	
Other equipment	2.715	2.000	-715	
Flights to data download	1.273	1.573	300	We had problems to download data from the collars and consequently flew more often than expected
Per diem expenses for field assistants	2.182	2.182	0	
Travel for field assistants	606	606	0	
Meals during field work	909	909	0	
Captures and veterinary analysis	5.152	5.152	0	

Batteries and film processing	606	606		
Dissemination of results	485	485	0	
<b>Total</b>	47.503	49998	2494	

# In 2012 we haven't more funds from the Booster Grant but continue related activities with funds of other sources.

**9. Looking ahead, what do you feel are the important next steps?**

We think that we must finish the lines of research that we are still developing. We consider important to continue with the monitoring of the population to evaluate if conservation actions have the effect that we expect. Also, we consider that is very important to start new lines of research related with the evaluation of the connectivity of the landscape at small scale to design corridors for jaguars in the most critical areas of the Green Corridor. Also we consider that we must start to work harder to understand the main causes of poaching of jaguars and conflicts between humans and these felids. All of them are considered priorities in the Jaguar Conservation Plan of the region. Finally we think that we must increase our activities of education and dissemination. This is an important step to convince the people and government that jaguars must survive in the Green Corridor and Argentina.

**10. Did you use the RSGF logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?**

Yes, we use the logo in all the reports, lectures of PowerPoint presentations at all the scientific meetings.